

**Trouble Reports taken from Physics Logs and MCR Logs**  
**10-15 thru 10-21-01**

**Monday: 10/15/01**

06:30:28- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}  
(Actual time: 06:30:24 +2402523) - Quench Link Interlock in Blue ring, 11b-ps1.

QPA Faults: b12-dhx-qp Crow,  
QD Alarms: 11b-qd1 B10DSA5\_A4VT Tq= -24  
Post Mortems: nothing unusual  
Qdplots indicate a **Real Quench**.

Quench Status: The quench link interlock happened a few seconds after the the end of store was initiated, **beam dumped**.

09:00- Magnets will not ramp -

Comments from MCR: (wfgman cannot talk to 7a-ps1. This may be why our tune changes didn't work. Fit reports that it is healthy. We are rebooting it anyway. 0925: L. Hoff performed an AC reset on 7a-ps1 to get the wfg's running. Ramping down.)

14:30:15- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}  
(Actual time: 14:30:08 +3280383)- Quench Link Interlock in Blue ring, 11b-ps1.

QPA Faults; b12-dhx-qp - CROW,  
QD Alarms; 11b-qd1 B10DSA5\_A4VT Tq= -24  
Post Mortems show nothing unusual  
Qdplots indicate a **Real Quench**.

Quench Status: **Beam Dump**.

(Actual time: 14:47:44 +3306390)- Yellow QLI 7b-ps1 Yellow occurred while running the blue recovery.

QPA Faults; b8-dhx-qp - CROW,  
QD Alarms; 7b-qd1 Y7DSA3\_A2VT Tq= -23  
Post Mortems at 1004b show yellow main dipole with disturbances before T=zero.  
Qdplots indicate a power supply glitch in the yellow dipole main.

Quench Status: **P.S. glitch, y-dmain**.

22:53:38- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}  
(Actual time: 22:53:32 +975794) - Quench Link Interlock in Blue ring, 11b-ps1.

QPA Faults; b12-dhx-qp - CROW  
QD Alarms; 11b-qd1 B10DSA5\_A4VT Tq= -24  
Post Mortems show nothing unusual  
Qdplots indicate a **Real Quench**.

Quench Status: The 10a-blm2 loss monitor board pulled the RHIC permit link when the beam was dumped causing the blue quench link interlock to followed soon after

**Tuesday: 10/16/01**

02:20- Ramping RHIC back to Injection; **yi10-tq5** tripped off and Blue beam was lost before the 3rd stepstone (MCR Comment): Stubborn to turn on, it was the cause of the Yellow beam loss during the first attempt at a store this shift.

09:11:55- Beam Abort, 10a-ps3.A dropped {Loss Monitor 1}  
(Actual time: 09:11:48 +1163697)- Quench Link Interlock in Blue ring, 11b-ps1.

QPA Faults; b12-dhx-qp CROW  
QD Alarms; 11b-qd1 B10DSA5\_A4VT Tq= -24 / 10-qd1 Tq= -13  
Post Mortems show nothing unusual  
Qdplots indicate a **Real Quench**.

Quench Status: beam was dumped because Cryo required access into the tunnel

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Additional information containing to the 09:11:55 Quench Link Interlock:

MCR got a message {yellow abort readbacks -13.9168458939 <50% of setpoint 2025.11729054. You will not be able to dump beam. Continue anyway?}

- Tue Oct 16 09:27:05 comment by...jak -- This Sequencer message appears during the down ramp, when a QLI occurs. The yellow beam has already been aborted at this point.
- -- Tue Oct 16 09:29:44 comment by...TJS -- To clarify, the yellow beam had been aborted by a permit pull when a blue dirty dump created enough losses (and a QLI in this case). The suggestion is to have the sequencer pass the abort checks if the permit is down, because then (by definition) the aborts have been pulled.

17:40- ZDC rates just took a fast dive and yellow beam debunched some. RF personnel deny responsibility. There are no power supply alarms other than a comm failure for 5A supplies. Resetting the 5A PLC.

19:00- yi7-th11 has tripped. (MCR comment: ZDC rates to zero, turning it back on.)  
Upon further review, snapshot showed that there were no alarms but that p.s. was in the off state. Possible front panel OFF push button trouble. Need to further investigate.

20:42:14- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}  
(Actual time: 20:42:08 +1548306) - Quench Link Interlock in Blue ring, 11b-ps1.  
QPA Faults: b12-dhx-qp CROW  
QD Alarms: 11b-qd1 B10DSA5\_A4VT Tq= -24  
Post Mortems show nothing unusual.  
Qdplots: indicate a **Real Quench** occurred.

Quench Status: **REAL**

(Actual time: 20:43:36 +970481)- Quench Link Interlock in Yellow ring, 4b-time.B  
QPA Faults; b4-dhx-qp CROW  
QD Alarms; no negative Tq's  
Post Mortems show yellow main dipole with disturbances before T=zero.  
Qdplots indicate a power supply glitch in the yellow dipole main.

Quench Status: **P.S. glitch, y-dmain.**

**Wednesday: 10/17/01**

05:56:23- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}  
(Actual time; 05:56:16 +3570115)- Quench Link Interlock in Blue ring, 11b-ps1.  
QPA Faults; b12-dhx-qp CROW  
QD Alarms; 11b-qd1 B10DSA5\_A4VT Tq= -24  
Post Mortems show nothing unusual.  
Qdplots indicate a **Real Quench**.

Quench Status: End of Store, likely another **dirty dump**. [Brian](#)

17:53:14- Beam Abort, 10a-ps3.A dropped {Loss Monitor 2}  
(Actual time; 17:57:40 +79101217) - Quench Link Interlock in Yellow ring, 11b-ps1, during the ramp down.  
QPA Faults; none  
QD Alarms; 11b-qd1 Y10DSA5\_A4VT Tq= -23  
Also many others: 1b-qd1 (-11), 3b-qd1 (-12), 5b-qd1 (-23) & 9b-qd1 (-23)  
Post Mortems at 1004b show yellow main dipole with disturbances before T=zero.  
Qdplots indicate a glitch in the yellow main dipole p.s.

Quench Status: **Yellow Main Dipole p.s. Glitch**

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20:53:04- Beam Abort, 7b-ps1 dropped Yellow Quench

(Actual time; 20:52:56 +3402575) - Quench Link Interlock in Yellow ring, 7b-ps1 dropped during the down ramp.

QPA Faults; none

QD Alarms; 7b-qd1 Y6DSA4\_A3VT Tq= -23

Post Mortems for 1004b show yellow main dipole with disturbances before T=zero.

Qdplots indicate a glitch in the yellow main dipole p.s.

Quench Status: **Yellow Main Dipole p.s. Glitch**

**Thursday: 10/18/01**

19:49:42 comment by...A. Meyer -- It appears that **bi9-qt7-ps** current is reading something else. Jon Laster has been contacted, and a message left with Carl Schultheiss. Carl has asked the MCR to do a VME reset on cfe-4b-ps2 the next time the Yellow Quench Link is down.

At the end of the shift a problem arose with the wfg hardware for bi8-tv4.

**Friday: 10/19/01**

05:25- Down ramps are failing because of various wfg errors. J. Van Zeits is restarting the yellow wcm manager. A. Marusic is looking into wfg problems

12:42:00- 12:41:59- Beam Abort, 12a-ps1.A dropped Blue Quench

(Actual time: 12:41:56 +288593) - Quench Link Interlock in Blue ring, 12a-ps1.A

Qpa Faults; none

QD Alarms; (12a-qd1.A) B12DRDX\_VT Tq= -23 also: 2b-qd1 (-11) & 8b-qd1 (-11)

Post mortems show nothing unusual, currents are near zero making it difficult to determine.

Qdplots show B12/11IMDX signal ramping down then quickly going up at T= -15 sec.

Quench Status: **Blue Main Dipole P.S. Glitch.**

(Actual Time: 12:47:48 +3738708) - Quench Link Interlock in Yellow ring, 11b-ps1 dropped first

QPA Faults; none

QD Alarms; (11a-qd1) Y10DSA4\_A3VT Tq= -23 also: 5b-qd1 (-23) & 9b-qd1 (-23)

Post Mortems for 11a-qd1 appear okay but 1004 show y-dmain with disturbance before T=zero

Qdplots YMDC signal jump up before zero

Quench Status: **Yellow Main Dipole P.S. Glitch.**

15:18:41- Beam Abort, 8b-ps1 dropped Blue Quench

(Actual Time: 15:18:36 +1040044) - Quench Link Interlock in Blue, 8b-ps1.

QPA Faults; b8-dhx-qp CROW

QD Alarms; (8b-qd1) B7QFQ2\_VT Tq= -24

Post Mortems show Bo7-qt2-ps & bo7-qd1-ps error before T=zero tripping link.

Qdplots: indicates VT drops before T=zero.

Quench Status: **REAL QUENCH**

16:02:37- (Blue) **bi9-qgt-ps** did not ramp/jump. -- Fri Oct 19 16:43:12 comment by...CM -- I checked gamma\_t's during several ramps, but can't find a problem. For fill numbers 01380 and 01385 there are several data sets in pscompare, showing that none of the gamma\_t's did anything, but these do not refer to real ramps. It seems that an accramp event started the data taking, but since this was no real ramp, no gamma\_t event occurred.

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(Actual Time: 16:05:08 +1746912) - Quench Link Interlock in Yellow, 5b-ps1.

QPA Faults;  
QD Alarms; (5b-qd1) Y5DSA5\_A2VT Tq= -23  
Post Mortems show yellow dipole main p.s. glitch.  
Qdplots: didn't need to look into.

Quench Status: **wrong slow factor used (operator error).**

18:40:12- Beam Abort, 8b-ps1 dropped Blue Quench

(Actual Time: 18:40:04 +3366462) - Quench Link Interlock in Blue, 8b-ps1.

QPA Faults; b8-dhx-qp CROW  
QD Alarms; (8b-qd1) B8-QFQ3\_VT Tq= -24  
Post Mortems  
Qdplots:

Quench Status: **REAL, (see paragraph below)**

19:52:47 comment by...Mei, Vadim -- It turns out this store was destroyed by the blue quench link caused by the large beam loss around phenix area. Vadim looked through all the ps data and finally, he found out what caused the quench. What happened is when the operator was trying to do squeeze ramp editor was killed and brought back, it comes back with ramp21 as default. Then when the operator tried to steer for Brahams, it was ramp21 activated instead. The beta squeeze to 1m in phenix caused large blue beam losses around phenix(see the loss pattern below) and caused the quench event. Cryo called later on confirmed that they saw temperature rising in the 8'clk blue triplet. The trouble we had with the ramp manager was because the message from the startup check said ramp manager wasn't running. Al found out the manager was actually running. The reason that startup thought it was off is probably it was started by Johannes in some "secret" area.

-- Sat Oct 20 07:48:07 comment by...Johannes -- This was not the case at all. The RampManager was running on the regular cpu, it was just not responding for a while. When the RampEditor was started it brought up an error stating the timeout. There is no default ramp selected, you have to select/return the ramp. Apparently the wrong one was chosen.

**Saturday: 10/20/01**

Cryo refrigerator problems

An oil pipe between a pump for the turbo expander and its oil reservoir sheared off in bldg 1005R, leaking around 70 gals of oil. No oil leaked outside the building. By the end of shift Cryo has begun recooling the refrigerator and the RHIC ring, but have down firm time estimates of when RHIC will be ready to resume beam operations.

**Sunday: 10/21/01**

08:39:33- Beam Abort, 2b-ps1 dropped Blue Quench

(Actual Time: 08:39:28 +1108229) - Quench Link Interlock in Blue, 2b-ps1.

QPA Faults; none  
QD Alarms; (2b-qd1) B1QFQ2\_VT Tq= -24 (also 1b-qd1(-12), 4b-qd1(-24), 5b-qd1(-11),  
6b-qd1(-12), 10a-qd1(-13) & 11b-qd1(-12)  
Post Mortems shows blue quad main like it glitched  
Qdplots: Blue QLI while ramping down on the hysteresis ramp

Quench Status: **Blue Main Quad P.S. Glitch**

NOTES for next two Quenches: (QLI in Blue first, then Yellow. 2 DX heaters fired in sector 10. The DX and D0 magnets in that region show voltage fluctuations prior to the event, but no beam losses correlate with them.)

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13:13:44- Beam Abort, 10a-ps3.A dropped Blue Quench

(Actual Time:13:13:36 +630318) - Quench Link Interlock in Blue, 10a-ps3.A.

QPA Faults; b10-dho-qp CROW & bi9-dhx-qp CROW  
QD Alarms; (10a-qd1) B10DRDO\_DO Tq= -22  
Post Mortems b10-dhx and bo10-dho show oscillation before T=zero  
Qdplots: indicate real quench initiated by P.S. failure

Quench Status: **REAL, power supply induced**

(Actual Time:13:13:36 +1538903) - Quench Link Interlock in Yellow, 10a-ps3.A.

QPA Faults; b10-dho-qp CROW & bi9-dhx-qp CROW  
QD Alarms; (10a-qd2) Y9DRDO\_DO Tq= -23  
Post Mortems yo9-dho and yi9-dho show current rise of approx 2 amp before T=zero  
Qdplots:

Quench Status: **REAL, power supply induced**

14:40:21- Beam Abort, 10a-ps3.A dropped Blue Quench

(Actual Time:14:40:12 +295920) - Quench Link Interlock in Blue, 10a-ps3.A.

QPA Faults; none  
QD Alarms; (10a-qd1) B10DRDX\_VT Tq= -23  
Post Mortems ramping up, b10-dho and dhx show oscillation.  
Qdplots:

Quench Status: **not real, possible firing card problem.**

(Actual Time:15:34:40 +1644645) - Quench Link Interlock in Yellow, 5b-ps1.

QPA Faults; none  
QD Alarms; (5b-qd1) Y5DSA3\_A2VT Tq= -23  
Post Mortems at zero current.  
Qdplots:

Quench Status: **Wrong slow factor of 3 used from Injection to Park (operator error).**

16:06:41- Beam Abort, 10a-ps3.A dropped Blue Quench

(Actual Time: 16:06:36 +1492133) - Quench Link Interlock in Blue 10a-ps3.A.

QPA Faults; none  
QD Alarms; (10a-qd1) B10DRDO\_DO Tq= -22  
Post Mortems show bo10-dhx and dho oscillating.  
Qdplots:

Quench Status: **not real, possible firing card problem.**

1607: We have continued to have problems with the bo10-dhx and bo10-dh0 supplies; turning off the supplies prior to quench recovery did not solve the problem. We had another QLI at injection current. A hysteresis ramp was successful. We were in contact with D. Bruno, G. Ganetis, and W. Louie via telephone regarding the Blue QLIs. Don believes the problem lies with bo10-dhx; he will check in again later but may be contacted via cell phone if we get another trip.